

Claims

1. A method of lining a storage tank comprising the steps of: -

5 providing a keying means on the inner surface of the tank;

10 applying a corrosion barrier coating to the keying means;

15 applying an interstitial grid to the tank;

20 laying up a pliable glass reinforced plastics material onto the grid;  
and

25 exposing the glass reinforced plastics material to ultra violet rays to  
cure the material and form a hardened inner liner shell for the tank.

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2. A method as claimed in claim 1 wherein the interstitial grid is provided by  
pre-formed sheets of flexible material.

3. A method as claimed in claim 1 wherein the grid is adhesively bonded to  
the corrosion barrier coating.

4. A method as claimed in claim 1 wherein the grid has a facing material  
applied to receive the glass reinforced plastics material.

5. A method as claimed in claim 4 wherein the facing is a polyester mat  
bonded to one side of the grid.

6. A method as claimed in claim 1 wherein at least portion of the grid is of a  
plastics material.

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7. A method as claimed in claim 1 wherein at least portion of the grid is of a composite material.

5 8. A method as claimed in claim 1 wherein at least portion of the grid is of a mesh material.

9. A method as claimed in claim 8 wherein the mesh is a metal mesh.

10. A method as claimed in claim 9 wherein the mesh is an aluminium mesh.

10 11. A method as claimed in claim 6 wherein the grid is of high density polyethylene material.

15 12. A method as claimed in claim 1 wherein, for lining, the tank is divided into a number of zones, which are separately lined.

13. A method as claimed in claim 12 wherein the final zone to be lined is adjacent a manway into the tank.

20 14. A method as claimed in claim 2 wherein the sheets of pliable glass reinforced plastics material applied to the grid in section, the marginal edges of the sections being butt jointed.

15. A method as claimed in claim 14 wherein the joints between adjacent sheets are covered with a GRP tape.

25 16. A method as claimed in claim 1 including the step of: -

30 applying a coating to the hardened GRP liner.

17. A method as claimed in claim 1 wherein the keying means is provided by grit blasting the inner surface of the tank.

18. A method as claimed in claim 1 including the step of: -

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cleaning the inner surface of the tank prior to providing the keying means.

19. A method as claimed in claim 18 wherein the inner surface is cleaned by  
10 water jet cleaning.

20. A method as claimed in claim 1 wherein the corrosion barrier is a glassflake epoxy resin.

15 21. A method as claimed in claim 20 wherein the corrosion barrier layer is applied to a dry film thickness of greater than 1000 microns.

22. A method as claimed in claim 1 including the steps, prior to application of a corrosion layer of: -

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inspecting the internal wall of the tank; and

repairing any imperfections in the tank wall.

25 23. A method as claimed in claim 1 wherein the GRP is exposed to UV by directing UV lamps at the GRP layer.

24. A method as claimed in claim 1 wherein the GRP material is covered with an outer protective film which is removed to expose the GRP material to  
30 UV.

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25. A method as claimed in claim 1 wherein the GRP coating is a glassflake epoxy resin.

5 26. A method as claimed in claim 1 wherein the tank is an underground liquid storage tank.

27. A tank whenever lined by a method as claimed in claim 1.

10 28. A tank as claimed in claim 27 having a tank wall, keying means on the inner surface of the tank wall, a corrosion barrier coating applied to the keying means, an interstitial grid applied to the tank, UV cured glass fibre reinforced material laid onto the grid forming a hardened inner liner shell for the tank.

15 29. A tank as claimed in claim 27 including a leak monitoring transducer in the interstitial space defined by the grid.

30. A tank as claimed in claim 27 including a vapour monitoring means in the interstitial space defined by the grid.

20 31. A tank as claimed in claim 30 wherein the vapour monitoring means includes a vapour sampling tube.

32. A tank as claimed in claim 29 including an alarm means associated with the monitoring means.

25 33. A tank as claimed in claim 32 wherein the alarm is mounted remote from the tank.